ABSTRACT OF THE DISCLOSURE

Disclosed is an apparatus and method for searching a base station in a mobile communications system, in which a mobile station acquires slot timing synchronization from a first signal on a primary sync channel (P-SCH) out of the P-SCH and a secondary sync channel (S-SCH) used for base station search, acquires frame timing synchronization (Fsync) from a second signal on the S-SCH, and determines a primary scrambling code group (PSCG) corresponding to the scrambling codes used by the respective base stations. The method comprises calculating and accumulating P-SCH RSSI values from the first signal at every slot and comparing the accumulated P-SCH RSSI values with first and second accumulation thresholds and providing the first and second search commands; and calculating S-SCH channel received signal strength indicator (RSSI) values from the second signal at every slot in one frame, and updating S-SCH RSSI values corresponding to the one frame as energy matrix values; calculating energy hypotheses corresponding to the energy matrix values using the energy matrix values and a predetermined secondary sync code (SSC) table in response to a first search command, and determining energy hypotheses having a value higher than a predetermined threshold as passed hypotheses; and calculating energy values for the passed hypotheses using the determined passed hypotheses and the SSC table in response to a second search command, and determining an energy hypothesis having a maximum energy as the Fsync and the PSCG.